

(19)



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11)

EP 1 197 694 A3

(12)

## EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
13.11.2002 Bulletin 2002/46

(51) Int Cl. 7: F16K 31/00, F24F 11/053,  
F24F 13/062

(43) Date of publication A2:  
17.04.2002 Bulletin 2002/16

(21) Application number: 01202119.2

(22) Date of filing: 05.06.2001

(84) Designated Contracting States:  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE TR  
Designated Extension States:  
AL LT LV MK RO SI

(30) Priority: 20.06.2000 FI 20001464

(71) Applicant: ABB FLÄKT OY  
37801 Toijala (FI)

(72) Inventors:  
• Hyvärinen, Juhani  
02230 Espoo (FI)  
• Kärmeniemi, Heli  
13130 Hämeenlinna (FI)

(74) Representative: Heinänen, Pekka Antero et al  
Heinänen Oy,  
Patenttitoimisto/Patent Agency,  
Annankatu 31-33 C  
00100 Helsinki (FI)

### (54) Controllable air diffuser

(57) Air diffuser for rooms and similar spaces, the diffuser being intended for mounting at the end of an air duct ending on the surface of a wall, ceiling or similar structure, and the air diffuser being comprised of an arcuate brace (1) or a similar member with a flow control disc (4) and diffuser body (3) mounted thereon, the flow control disc (4) having an actuator connected thereto for moving the flow control disc (4) between two limit positions called the minimum-opening position and the max-

imum-opening position, the actuator being equipped with spring elements (7, 11) of which at least one first spring is adapted to serve for moving the flow control disc (4) toward the maximum-opening position while at least one second spring serves for moving the flow control disc toward the minimum-opening position. The invention is implemented so that at least one of said spring elements is a thermally actuated memory metal spring (11) whose spring constant is capable of changing with temperature in a preprogrammed manner.

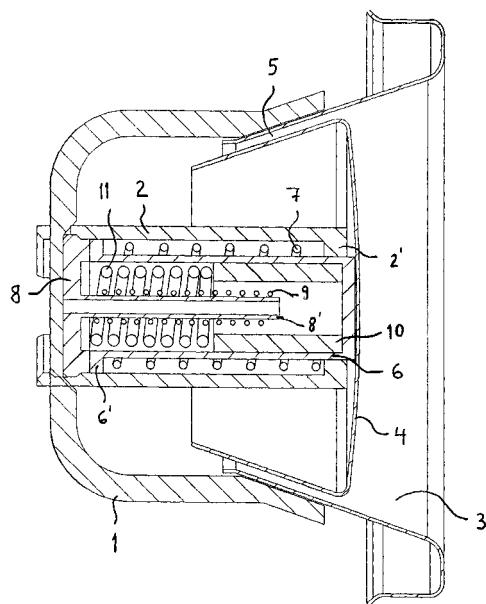


Fig. 2



DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	FR 2 082 292 A (GAROCHE MAURICE) 10 December 1971 (1971-12-10) * page 2, line 8 - page 3, line 17 * * figures 1,2 *	1,4	F16K31/00 F24F11/053 F24F13/062
A	---	6	
X	US 5 556 335 A (HOLYOAKE NOEL V) 17 September 1996 (1996-09-17) * column 5, line 29 - column 6, line 22 * * column 7, line 38 - column 8, line 21 * * figures 1,4 *	1,4	
A	---	1-6	
A	DE 39 10 839 A (LICENTIA GMBH) 11 October 1990 (1990-10-11) * column 2, line 29 - line 67 * * figure 1 *		
A	---		
A	US 4 243 175 A (MCSWAIN EDWARD D) 6 January 1981 (1981-01-06) * column 4, line 37 - line 63 * * column 5, line 13 - line 39 * * figures *	1-3,5,6	
A	---		TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	US 5 816 306 A (GIACOMEL JEFFREY A) 6 October 1998 (1998-10-06) * column 9, line 64 - column 11, line 13 * * figure 5 *	1-3,5,6	F24F F16K
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	25 September 2002	Ceuca, A-N	
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone	T : theory or principle underlying the invention		
Y : particularly relevant if combined with another document of the same category	E : earlier patent document, but published on, or after the filing date		
A : technological background	D : document cited in the application		
O : non-written disclosure	L : document cited for other reasons		
P : Intermediate document	& : member of the same patent family, corresponding document		

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 20 2119

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

25-09-2002

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
FR 2082292	A	10-12-1971	FR	2082292 A5	10-12-1971
US 5556335	A	17-09-1996	NZ	247231 A	26-10-1994
			AU	674049 B2	05-12-1996
			AU	5797294 A	29-09-1994
			CA	2119704 A1	24-09-1994
			GB	2277374 A ,B	26-10-1994
DE 3910839	A	11-10-1990	DE	3910839 A1	11-10-1990
US 4243175	A	06-01-1981	US	4328927 A	11-05-1982
US 5816306	A	06-10-1998	WO	9514843 A1	01-06-1995
			EP	0733147 A1	25-09-1996